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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/557,538	12/22/2006	Egidio Berwanger	033794/303473	2146

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EXAMINER

WEINSTEIN, LEONARD J

ART UNIT	PAPER NUMBER
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3746

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/557,538	Applicant(s) BERWANGER, EGIDIO	
	Examiner LEONARD J. WEINSTEIN	Art Unit 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>11/21/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
 - a. Page 5, line 14 – “suffer” should be amended to recite --- suffering ---;
 - b. Page 6, line 22 – “one positions the a first insulating element 20” should be amended to recite --- one positions the a first insulating element 20’---;
 - c. Page 6, line 24-25 – “the signal terminal 33 an the feed terminal 34” should be amended to recite --- the signal terminal 33 an the feed terminal 34 ---;

Appropriate correction is required.

Claim Objections

2. Claims 1, 4, 6, and 10 are objected to because of the following informalities:
 - a. **Claim 1** includes the limitation of “the motor (30)” in line 10 of the claim. As previously presented in claim one this limitation should be amended to recite - -- electric motor (30) --- for clarity and consistency.
 - b. **Claim 6** reintroduces the element of a bias circuit which was initially recited in claim 1. The claim language as written suggests that the bias circuit in claim 6 is somehow different from the bias circuit of claim 1. Such an interpretation would not be commensurate in scope with the instant disclosure because only one bias circuit is described. The limitations including:

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- “characterized by comprising a bias circuit (51) associated to the accelerometer (2), the bias circuit (51) being mounted in an internal portion (50')"

will be considered to be:

- ~~--- characterized by comprising a~~ wherein the bias circuit (51) associated to the accelerometer (2), ~~the bias circuit (51) being is~~ mounted in an internal portion (50') ---

c. **Claim 10** reintroduces the element of an accelerometer which was initially recited in claim 9. The claim language as written suggests that the accelerometer in claim 10 is somehow different from the accelerometer claim 9. Such an interpretation would not be commensurate in scope with the instant disclosure because only one accelerometer described. The limitations including:

- “characterized in that the sensor assembly (1) comprises an accelerometer (2) associated to a support means (3)"

will be considered to be:

- ~~--- characterized in that the sensor assembly (1) comprises an~~ the accelerometer (2) associated to a support means (3) ---

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. **Claim 4** is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an arrangement where a second insulating member (20") which is provided on the surface (3a) of the support (3), does not reasonably provide enablement for an arrangement where a first insulating member 20' is positioned on the surface (3a) of the support (3). The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to build the invention commensurate in scope with these claims. **Claim 4** recites the limitations wherein a "first insulating member 20' is positioned on the surface (3a) of the support (3)" however as clearly shown in figure 2 it is the second insulating member (20") which is provided on the surface (3a) of the support (3). Therefore the limitations will be considered to be

a. "first insulating member (20') is positioned on the surface (3a) of the support"

will be considered to be:

b. --- first second insulating member (20') is positioned on the surface (3a) of the support ---

5. **Claims 5 and 14** are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an arrangement where the first transducer, second transducer, and the second insulating member are all disposed on a side of the first insulating element opposite to a side on which a weight is disposed, does not reasonably provide enablement for an arrangement where each first transducer, second

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transducer, and the second insulating member overlap the first insulating member. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to build the invention commensurate in scope with these claims. Figure 2 of the instant invention clearly shows that a weight 2a is placed on top of a first insulting member 20' and the first transducer 4a, second transducer 4b, and the second insulating member 20" are located below the first insulating member. From top to bottom the weight 2a, first insulating member 20', second transducer 4b, first transducer 4a, and second insulating member are stacked on top of one another and no element hangs over an element below it (i.e. no element has one end/side along a horizontal axis of figure 2 that is covered by the element below it and an opposite side that is not). The examiner also notes that the only place where the term "overlapping" appears in the instant disclosure is in claims 5 and 14. As best understood by the examiner the limitations including:

- “the first and second acceleration transducers (4a, 4b), the second insulating element (20") and the weight (2a) are positioned overlapping the first insulating element (20')”

will be considered to be:

- --- the first and second acceleration transducers (4a, 4b), and the second insulating element (20") are ~~and the weight (2a) are positioned overlapping~~ the on an opposite side of the first insulating element (20') from the weight. ---

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. **Claim 2** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 2 is indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention because it is unclear whether first recitation of "the first and second acceleration transducers" is associated with the clause before it or after it. As best understood by the examiner the limitations of:

- "a weight (2a) connected to a first insulating element (20') and a second insulating element (20''), the first and second acceleration transducers (4a, 4b), and signal terminal (33) and feed terminal (34) projecting from the first and second acceleration transducers (4a, 4b)"

will be considered to be:

- --- a weight (2a) connected to a first insulating element (20'), ~~and~~ a second insulating element (20''), and the first and second acceleration transducers (4a, 4b), ~~and~~ wherein the signal terminal (33) and feed terminal (34) projecting from the first and second acceleration transducers (4a, 4b) ---

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 1-18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Etter

WO 02/33260 ("Etter") in view of Schmid 5,117,696 ("Schmid '696").

a. With respect to **Claims 1 and 9** -

i. **Etter** – With reference to the unofficial translation of Etter as provided through www.easpacenet.com and attached here with, Etter teaches all the limitations as claimed including:

[claims 1 and 9] a sensor assembly 20 for measuring movements of a pump 10 including: the fluid pump (10) being driven by an electric motor (14) and the electric motor (14) being connectable to a feed voltage (via terminal box 48), the sensor assembly (20, 22, 26) comprising an accelerometer (20) and being characterized in that the accelerometer (20) is electrically associated to a bias circuit (18), wherein the accelerometer 20 is electrically connectable (via 18 and 48) to the feed voltage of the motor (14) and an external measuring circuit (52); and

[claim 9]

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A cylinder (28), a piston (13), and a housing (16) comprising a hermetic terminal (as defined by connections provided through a wall of element 16 from element 48 being part of element 16 that is mounted in a top section of element 16) and hermetically enclosing the cylinder (28) and the piston (13), forming a hermetic assembly (10), the piston (13) being driven by an electric motor (14), the electric motor (14) being connected to an electric voltage (via 48) by means of a pair of voltage terminals (via element 48) associated to the hermetic terminal (48), the fluid pump (10) being characterized by comprising a sensor assembly (1) associated to the cylinder (58). See Etter WO 02/33260 Unofficial Translation (“the translation”),

http://epo.worldlingo.com/wl/epo/epo.html?ACTION=description-retrieval&OPS=ops.epo.org&LOCALE=en_EP&FORMAT=docdb&COUNTRY=WO&NUMBER=0233260&KIND=A1&T=1, (June 8, 2010) (“The vibration sensor 20 is as piezoelectrically working acceleration adaptor formed and 16 connected in the range of the terminal box 48 fixed with the compressor stator. In principle also the cylinder head is 36 suitable good as measuring point.”).

ii. **Schmid ‘696** – Etter does not explicitly detail how an accelerometer is connected to the control 18 and microprocessor 52 within terminal box 48. Therefore Etter does not explicitly teach the limitations for an accelerometer suitable for vibration monitoring that are taught

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Schmid '696 including: **[claims 1 and 9]** first and second acceleration transducers (2; Schmid – col. 3 ll. 46-50), a feed terminal (9) and a signal terminal (output of cross connected electrodes; “Schmid – output”; Schmid col. 3 ll. 10-13), the feed terminal (9) being electrically connectable to the feed voltage (not shown), and the signal terminal (Schmid – output) being electrically connectable to an external measuring circuit (Schmid – col. 3 ll. 36-39)

iii. **Standard for Combining Known Elements** - Where a claimed improvement on a device or apparatus is no more than "the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for improvement," the claim is unpatentable under 35 U.S.C. 103(a). *Ex Parte Smith*, 83 USPQ.2d 1509, 1518-19 (BPAI, 2007) (*citing KSR v. Teleflex*, 127 S.Ct. 1727, 1740, 82 USPQ2d 1385, 1396 (2007)). Absent evidence that the modifications necessary to effect the combination of elements is uniquely challenging or difficult for one of ordinary skill in the art, the claim is unpatentable as obvious under 35 U.S.C. 103(a). *Ex Parte Smith*, 83 USPQ.2d at 1518-19 (BPAI, 2007) (*citing KSR*, 127 S.Ct. at 1740, 82 USPQ2d at 1396).

iv. **Combination of Etter and Schmid** – Etter teaches a compressor that uses an accelerometer to monitor the vibrations experienced by a compressor during operation and modify a signal to a motor driving the compressor. Etter teaches a non-specific type of accelerometer whereas

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Schmid teaches a compact biaxial accelerometer that detects accelerations in two directions (Schmid – col. 3 ll. 10-15). The accelerometer of Schmid is an improvement over the accelerometer of Etter and was known in the art at the time the invention was made. Providing the accelerometer of Schmid to the compressor of Etter would result in the predictable result of a controller that receives signals representing the vibrations experience by the compressor during normal operation. Therefore the limitations claim a combination that only unites old elements with no change in the respective functions of those old elements, and the combination of those elements yields a predictable result.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the a compressor that monitors vibrations to control operation, as taught by Etter, with a biaxial accelerometer, as taught by Schmid, since the modification amounts to the predictable use of prior art elements according to their established functions resulting in the simple substitution of one known element for another.

- b. With respect to claims depending from **claim 1** -
 - i. With respect to **claims 2-5** – Schmid teaches the limitations including:

[claim 2]

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A weight (5) connected to a first insulating element (4 - bottom) and a second insulating element (4 - top), and the first and second acceleration transducers (Schmid – col. 44-50), wherein signal terminal (Schmid-output) and feed terminal (9) project from the first and second acceleration transducers (Schmid – col. 44-50);

[claim 3]

At least one support means (1) comprising a base portion (1), the base portion (1) being capable of being fixed to a fluid pump (Schmid – col. 1 ll. 57-58);

[claim 4]

Wherein the second insulating element (4-bottom) is positioned on the surface (3a) of the support (3);

[claim 5]

Wherein first and second acceleration transducers (Schmid – col. 1 ll. 57-58) and the second insulating element (4-bottom) are positioned on an opposite side of the first insulating element (4-top) from the weight 5.

- ii. With respect to **claims 6-8** – Etter teaches the limitations including:

[claim 6]

Wherein a bias circuit (18) associated to the accelerometer (20), is mounted in an internal portion (48) of the housing (16) and connected to the measuring circuit (52);

[claim 7]

Wherein a bias circuit (18) comprises a transistor (as element 18 is control device which are known to have transistors that are connected to control devices that direct power and monitor or transfer signals from sensing devices) operatively associated to the a signal terminal (as would be defined by the terminal connection made between element 52 and element 20 through element 18 such that element 52 could process said signals and determine an operating characteristic to be implemented) and to a terminal (not shown but understood that element 20 receives power through a connection between element 18 and power source);

[claim 8]

Wherein an external measuring circuit (52) comprises a microprocessor (52; see the translation), the microprocessor (52) measuring the signal of the sensor assembly (20) by means of the signal terminal (as discussed above).

- iii. A combination between Etter and Schmid would teach the limitations as discussed because the limitations of claims 2-5 are directed toward specific elements included in the accelerometer of Schmid which would be incorporated when substituted for the accelerometer of Etter. With respect to claims 6-8, the limitations are directed toward elements of a pump that interact with an accelerometer and which are taught by Etter

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and would interact with the accelerometer of Schmid in order to operate the pump.

c. With respect to claims depending from **claim 9** -

i. With respect to **claims 10 and 11** – Etter teaches the limitations including:

[claim 10]

A sensor assembly (20) that is an accelerometer (20) associated to a support means (surface of element 16 defining a partition between inner section of element 16 around element 14 and an inner section of element 48; “16-separating surface”), the support means (“16-separating surface”) being fixed to the hermetic assembly (16);

[claim 11]

Wherein a sensor assembly (20) comprises a base portion (face of element 20 mounted to element 16-separating surface; “20-bottom face”), the base portion (20-bottom face) being fixedly associable to the hermetic assembly (16).

ii. With respect to **claim 12-14** – these limitations are the same as those of claims 2, 4, and 5, and are taught by Schmid as discussed above.

iii. With respect to **claim 15 and 16** – these limitations are the same as those of claims 7 and 8, and are taught by Etter as discussed above.

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- iv. With respect to **claim 18** –Etter teaches a terminal box 48 mounted in upper section of element 16 with a separating wall between the inner section of element 16 where element 14 is disposed and an inter section of element 48 where sensor 20 is housed. There are connection wires that go through the partition and connect to various sensors therefore Etter teaches the limitations for housing 16 with a hermetic terminal (as defined by connections provided through a wall of element 16 from element 48 being part of element 16 that is mounted in a top section of element 16) for passage of feed and signal terminals not shown.
- d. With respect to **Claims 18** - a combination of the references would teach the limitations of a cooler (refrigerant compressor of Etter) including the sensor assembly (sensor 7 of Schmid) as discussed above in section a of this section.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure are cited on form 892 attached herewith.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEONARD J. WEINSTEIN whose telephone number is (571)272-9961. The examiner can normally be reached on Monday - Thursday 7:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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